

VRT 090 1-Stage Specifications

Frame Size	090										
Ratio	Unit	Note	4	5	6	7	8	9	10		
Nominal Output Torque	[Nm]	*1	77	84	84	84	84	84	84		
Maximum Acceleration Torque	[Nm]	*2	165	165	165	165	165	112	112		
Maximum Torque	[Nm]	*3	200	200	195	195	190	145	145		
Emergency Stop Torque	[Nm]	*4	250	250	250	250	250	200	200		
Nominal Input Speed	[rpm]	*5	2900	2900	2900	3100	3100	3100	3100		
Maximum Input Speed	[rpm]	*6	7500	7500	7500	7500	7500	7500	7500		
No Load Running Torque	[Nm]	*7	0.17								
Maximum Radial Load	[N]	*8	3300								
Maximum Axial Load	[N]	*9	1700								
Maximum Tilting Moment	[Nm]	*10	170								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	--	--	--	--	--	--	--		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.78	0.58	0.48	0.42	0.38	0.36	0.34		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	1.2	0.98	0.87	0.82	0.78	0.75	0.74		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.9	2.7	2.6	2.6	2.5	2.5	2.5		
Efficiency	[%]	*11	95								
Torsional Rigidity	[Nm/arc-min]	*12	32	33	30	30	23	23	23		
Maximum Torsional Backlash	[arc-min]	--	Standard ≤ 3 / Reduced ≤ 1								
Noise Level	dB [A]	*13	≤ 67								
Protection Class	--	*14	IP54 (IP65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	3.6								

VRT 090 2-Stage Specifications

Frame Size	090										
Ratio	Unit	Note	16	20	25	28	35	40	45		
Nominal Output Torque	[Nm]	*1	80	86	106	118	118	118	88		
Maximum Acceleration Torque	[Nm]	*2	165	165	165	165	165	165	112		
Maximum Torque	[Nm]	*3	165	165	165	165	165	165	112		
Emergency Stop Torque	[Nm]	*4	250	250	250	250	250	250	200		
Nominal Input Speed	[rpm]	*5	3500	3500	3500	3500	3500	3500	3500		
Maximum Input Speed	[rpm]	*6	8500	8500	8500	8500	8500	8500	8500		
No Load Running Torque	[Nm]	*7	0.05								
Maximum Radial Load	[N]	*8	3300								
Maximum Axial Load	[N]	*9	1700								
Maximum Tilting Moment	[Nm]	*10	170								
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.26	0.20	0.19	0.24	0.19	0.12	0.19		
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.43	0.36	0.36	0.40	0.35	0.28	0.35		
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.81	0.75	0.74	0.79	0.74	0.67	0.73		
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.5	2.5	2.5	2.5	2.5	2.4	2.5		
Efficiency	[%]	*11	90								
Torsional Rigidity	[Nm/arc-min]	*12	32	32	32	31	32	30	30		
Maximum Torsional Backlash	[arc-min]	--	Standard ≤ 3 / Reduced ≤ 1								
Noise Level	dB [A]	*13	≤ 67								
Protection Class	--	*14	IP54 (IP65)								
Ambient Temperature	[°C]	--	0 - 40								
Permitted Housing Temperature	[°C]	--	90								
Weight	[kg]	*15	4								

VRT 090 2-Stage Specifications

Frame Size	090								
Ratio	Unit	Note	50	60	70	80	90	100	
Nominal Output Torque	[Nm]	*1	118	118	118	118	88	88	
Maximum Acceleration Torque	[Nm]	*2	165	165	165	165	112	112	
Maximum Torque	[Nm]	*3	165	165	165	165	112	112	
Emergency Stop Torque	[Nm]	*4	250	250	250	250	200	200	
Nominal Input Speed	[rpm]	*5	3800	3800	4500	4500	4500	4500	
Maximum Input Speed	[rpm]	*6	8500	8500	8500	8500	8500	8500	
No Load Running Torque	[Nm]	*7	0.05						
Maximum Radial Load	[N]	*8	3300						
Maximum Axial Load	[N]	*9	1700						
Maximum Tilting Moment	[Nm]	*10	170						
Moment of Inertia ($\leq \varnothing 8$)	[kgcm ²]	--	0.12	0.11	0.11	0.11	0.11	0.11	
Moment of Inertia ($\leq \varnothing 14$)	[kgcm ²]	--	0.28	0.27	0.27	0.27	0.27	0.27	
Moment of Inertia ($\leq \varnothing 19$)	[kgcm ²]	--	0.67	0.67	0.67	0.67	0.67	0.67	
Moment of Inertia ($\leq \varnothing 28$)	[kgcm ²]	--	2.4	2.4	2.4	2.4	2.4	2.4	
Efficiency	[%]	*11	90						
Torsional Rigidity	[Nm/arc-min]	*12	30	24	28	22	22	22	
Maximum Torsional Backlash	[arc-min]	--	Standard ≤ 3 / Reduced ≤ 1						
Noise Level	dB [A]	*13	≤ 67						
Protection Class	--	*14	IP54 (IP65)						
Ambient Temperature	[°C]	--	0 - 40						
Permitted Housing Temperature	[°C]	--	90						
Weight	[kg]	*15	4						

*1 At nominal input speed, service life is 20,000 hours

*2 The maximum torque when starting or stopping operation. Apply Cycle Factor f_0 , found on page 468, for higher duty cycle applications

*3 Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft

*4 The maximum torque allowed under a stress situation. Permitted 1,000 times during service life

*5 The average input speed at nominal input torque. Maintain housing temperature below permitted value

*6 The maximum intermittent input speed

*7 Torque at no load applied to the input shaft at nominal input speed

*8 The maximum radial load that the gearbox can accept

*9 The maximum axial load that the gearbox can accept

*10 The maximum load at output flange surface

*11 The efficiency at the nominal output torque rating

*12 This does not include lost motion

*13 Contact Nidec Drive Technology for the testing conditions and environment

*14 IP65 (wash-down) is available as an option. Contact Nidec Drive Technology for more details

*15 Weight may vary slightly between models

VRSF

PRE

PRF

VR

VRB

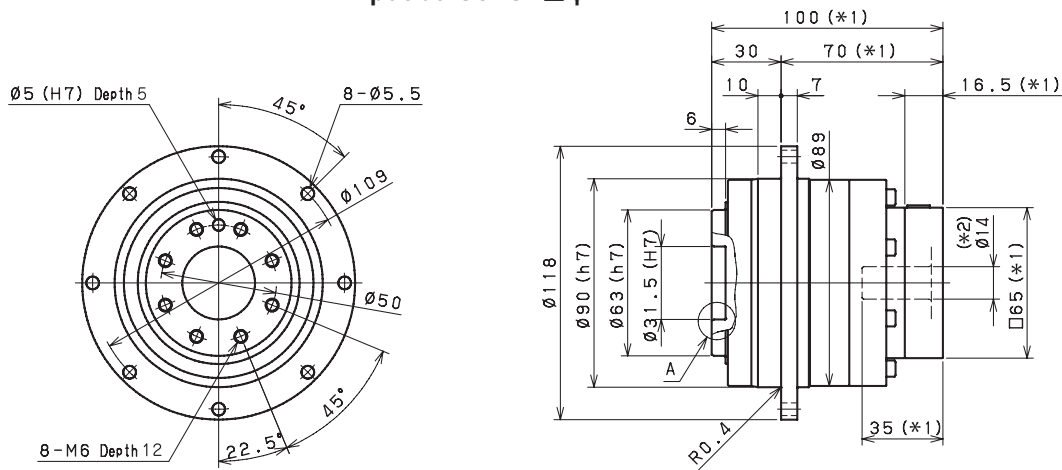
VRS

VRT

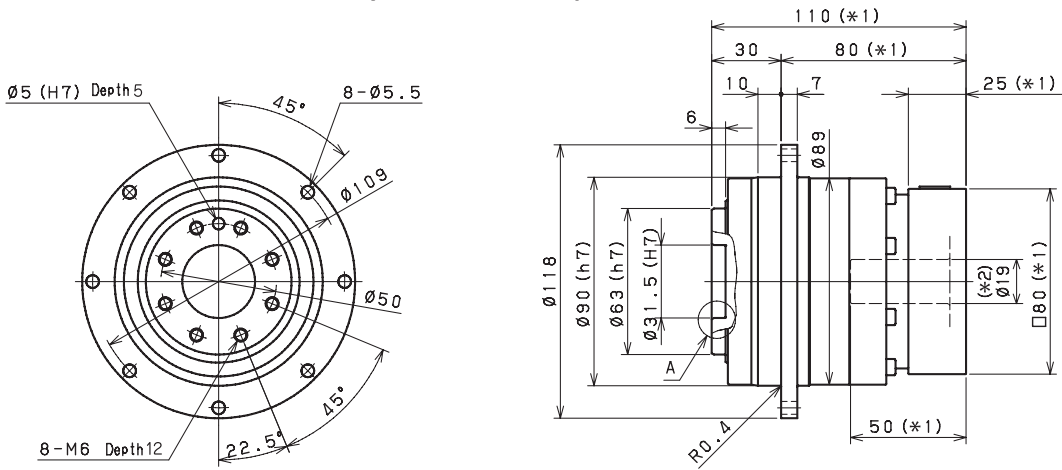
PLANETARY Inline Gear Reducers

VRT 090 1-Stage Dimensions

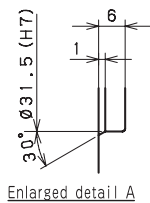
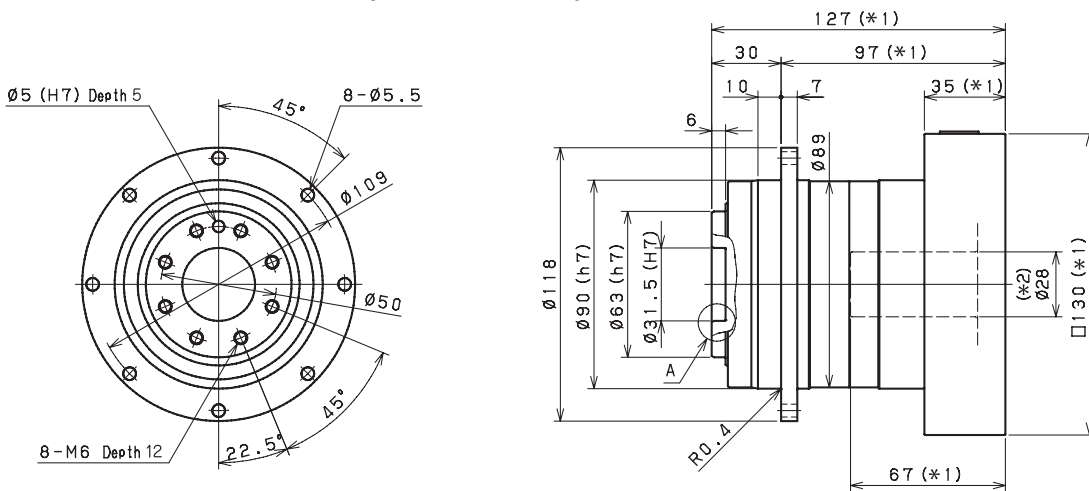
Input bore size $\leq \varnothing 14$ mm



Input bore size $\leq \varnothing 19$ mm



Input bore size $\leq \varnothing 28$ mm

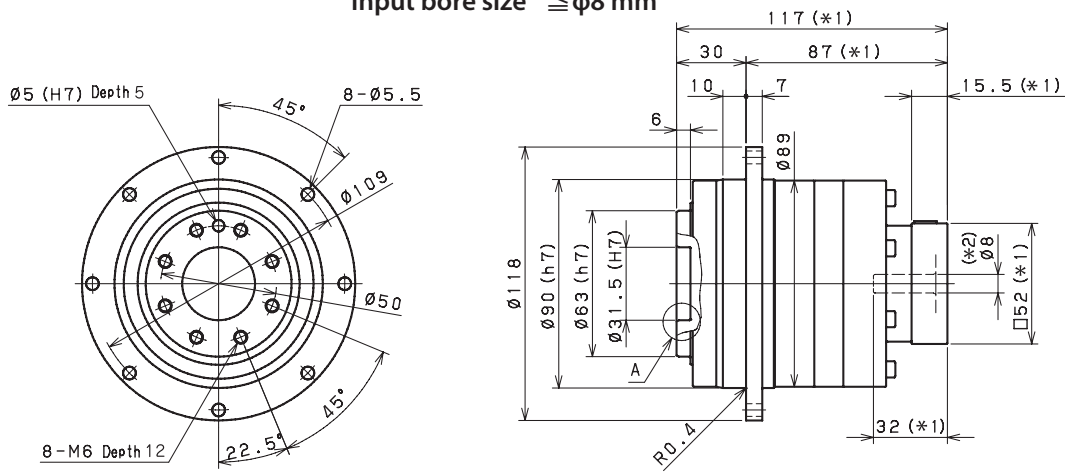


*1 Length will vary depending on motor

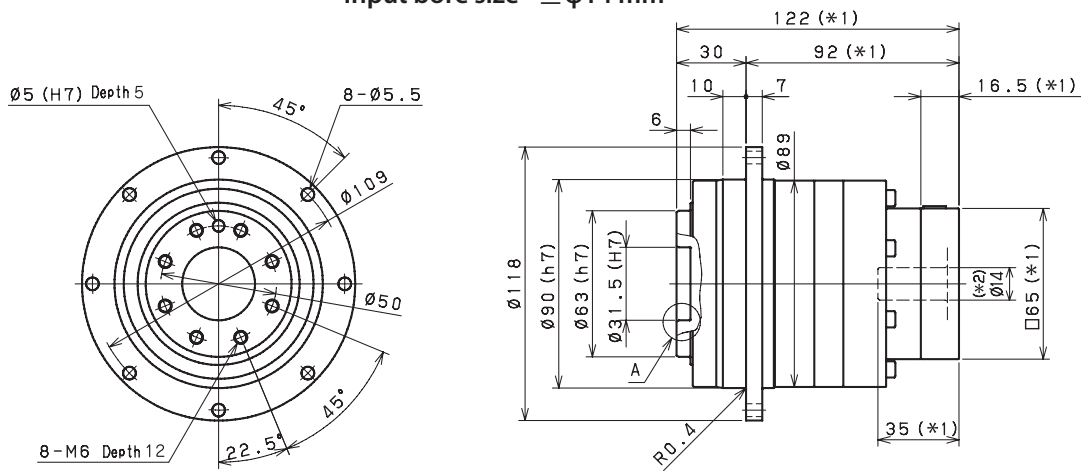
*2 Bushing will be inserted to adapt to motor shaft

VRT 090 2-Stage Dimensions

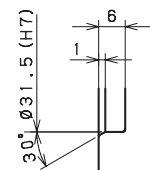
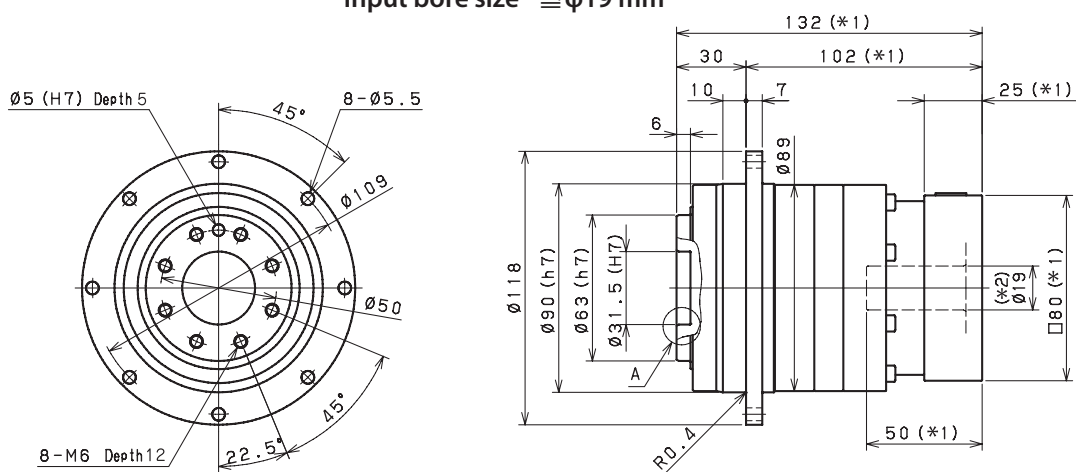
Input bore size $\leq \varnothing 8 \text{ mm}$



Input bore size $\leq \varnothing 14 \text{ mm}$



Input bore size $\leq \varnothing 19 \text{ mm}$ ^(*3)



Enlarged detail A

*1 Length will vary depending on motor

*2 Bushing will be inserted to adapt to motor shaft

*3 28mm input bore is available for this frame size. Use our online configurator to make your selection or contact us for assistance

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